Animal-Free™ Recombinant Human FGF basic Heat Stable

Catalog Number: BT-FGFBHS-AFL

DESCRIPTION

Source	*E. coli*-derived human FGF basic/FGF2/bFGF protein Ala135-Ser288 (with modifications) Accession # NP_001997.5 Produced using non-animal reagents in an animal-free laboratory.
N-terminal Sequence Analysis	Ala135 & Ala136
Predicted Molecular Mass	17 kDa

SPECIFICATIONS

SDS-PAGE	16-19 kDa, under reducing conditions.
Activity	Measured in a cell proliferation assay using NR6R-3T3 mouse fibroblast cells. Raines, E.W. *et al.* (1985) Methods Enzymol. **109**:749. The ED_{50} for this effect is 0.0500-0.600 ng/mL. The specific activity of Animal-Free™ Recombinant Human FGF basic Heat Stable is >1.60 x 10^6 IU/mg, which is calibrated against the human FGF basic/FGF2 WHO International Standard (NIBSC code: 90/712).
Endotoxin Level	<0.10 EU per 1 µg of the protein by the LAL method.
Purity	>95%, by SDS-PAGE with quantitative densitometry by Coomassie® Blue Staining.
Formulation	Lyophilized from a 0.2 µm filtered solution in HEPES and Sodium Sulfate with Trehalose. See Certificate of Analysis for details.

PREPARATION AND STORAGE

Reconstitution	Reconstitute the 25 µg size at 250 µg/mL in sterile water. Reconstitute all other sizes at 500 µg/mL in sterile water.
Shipping	The product is shipped at ambient temperature. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	**Use a manual defrost freezer and avoid repeated freeze-thaw cycles.** • 12 months from date of receipt, -20 to -70 °C as supplied. • 1 month, 2 to 8 °C under sterile conditions after reconstitution. • 3 months, -20 to -70 °C under sterile conditions after reconstitution.

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Global | bio-techne.com info@bio-techne.com techsupport@bio-techne.com TEL: 1.612.379.2956
USA | TEL: 800.343.7475 Canada | TEL: 855.668.8722 Europe | Middle East | Africa TEL: +44.0.1235.529449
China | info.cn@bio-techne.com TEL: 400.821.3475

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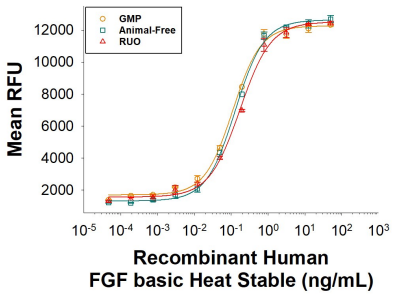
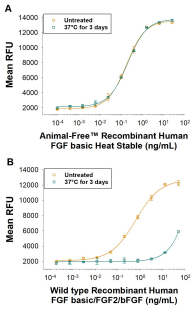
DATA

Bioactivity



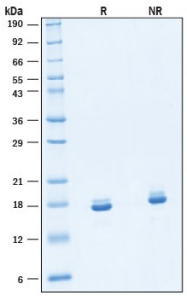
Equivalent Bioactivity of GMP, Animal-Free, and RUO grades of Recombinant Human FGF basic Heat Stable proteins. Equivalent bioactivity of GMP (Catalog # BT-FGFBHS-GMP), Animal-Free (Catalog # BT-FGFBHS-AFL) and RUO (Catalog # BT-FGFBHS) grades of Recombinant Human FGF basic Heat Stable proteins as measured in a cell proliferation assay using NR6R-3T3 mouse fibroblast cells (orange, green, red, respectively).

Bioactivity



Animal-Free™ Recombinant Human FGF basic Heat Stable Bioactivity. Animal-Free™ Recombinant Human FGF basic Heat Stable induces NR6R 3T3 mouse fibroblast cell proliferation. (A) Animal-Free™ Recombinant Human FGF basic Heat Stable (Catalog # BT-FGFBHS-AFL) or (B) wild type (WT) Recombinant Human FGF basic/FGF2/bFGF Proteins were untreated or incubated at 37°C for 3 days in media. Animal-Free™ Recombinant Human FGF basic Heat Stable protein retained similar activity to the untreated Heat Stable protein indicating that the Heat Stable protein has increased thermal stability. In contrast, WT Recombinant Human FGF basic/FGF2/bFGF Protein significantly lost activity suggesting less thermal stability.

SDS-PAGE



Animal-Free™ Recombinant Human FGF basic Heat Stable Protein SDS-PAGE. 2 µg/lane of Animal-Free™ Recombinant Human FGF basic Heat Stable Protein (Catalog # BT-FGFBHS-AFL) was resolved with SDS-PAGE under reducing (R) and non-reducing (NR) conditions and visualized by Coomassie® Blue staining, showing bands at 16-19 kDa, under reducing conditions.

BACKGROUND

FGF basic (also known as FGF-2 and HBGF-2) is an 18-34 kDa, heparin-binding member of the FGF superfamily of molecules. As a growth factor, FGF basic is expressed in a variety of cell types and involved in the regulation of cell proliferation, differentiation, migration and survival. FGF basic promotes self-renewal and upregulates pluripotency markers such as Oct4, Sox2 and Nanog, making it well-known for maintenance of pluripotency in embryonic stem cells (ESCs) and induced pluripotent stem cells (iPSCs). These functions make FGF basic an important cell culture supplement in stem cell applications for regenerative medicine and clinical manufacturing protocols.

Our Heat Stable FGF basic has been engineered for thermostability and maintains its activity at 37℃ when compared to wild-type. Heat-stable FGF basic can enhance the flexibility and efficiency of cell culture by reducing the need for frequent media changes.

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MANUFACTURING SPECIFICATIONS

Animal-Free Manufacturing Conditions
Our dedicated controlled-access animal-free laboratories ensure that at no point in production are the products exposed to potential contamination by animal components or byproducts. Every stage of manufacturing is conducted in compliance with R&D Systems' stringent Standard Operating Procedures (SOPs). Production and purification procedures use equipment and media that are confirmed animal-free.

Production

- All molecular biology procedures use animal-free media and dedicated labware.
- Dedicated fermentors are utilized in committed animal-free areas.

Purification

- Protein purification columns are animal-free.
- Bulk proteins are filtered using animal-free filters.
- Purified proteins are stored in animal-free containers in a dedicated cold storage room.

Quality Assurance

- Low Endotoxin Level.
- No impairment of biological activity.
- High quality product obtained under stringent conditions.
- For *ex vivo* research or bioproduction, **additional documentation** can be provided.

Please read our complete Animal-Free Statement

PRODUCT SPECIFIC NOTICES

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